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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/943,641	08/30/2001	Philip A. Beachy	JHUC-P01-017	9388

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4365 EXECUTIVE DRIVE
SUITE 1100
SAN DIEGO, CA 92121-2133

EXAMINER

CHANDRA, GYAN

ART UNIT PAPER NUMBER

1646

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/943,641	Applicant(s) BEACHY ET AL.	
	Examiner Gyan Chandra	Art Unit 1646	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4,5,8-23 and 28-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,8-23 and 28-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's response filed on 11/12/2007 is acknowledged and fully considered.

Status of Application, Amendments, And/Or Claims

The amendments of claims 1 and 32 and the cancellation of claim 27 have been made of record.

Claims 1, 4, 5, 8-23 and 28-32 are pending and under examination.

Response to Arguments

Claim Rejections - maintained

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1, 4, 5, 8-17, 19-23, and 29-32 remain rejected under 35 U.S.C. 102(a) as being anticipated by Parnot et al for the reasons of record in pages 2-6 of the Office Action mailed on 7/11/2007.

Applicants argue (page 7 of Response) that Parnot et al teach methods of finding every possible mutations that constitutively activate a receptor by preparing a library of randomly mutated said receptor. Applicants argue that Parnot et al do not teach

identifying small or medium side chain amino acid residues of a candidate orphan receptor and then replacing them with coding sequences for large side-chain amino acids.

Applicants' arguments have been fully considered but they are not persuasive because Pernot et al teach replacing every possible amino acid with other amino acids. Pernot et al do not explicitly recite to replace only small or medium-chain amino acids with long-chain amino acids but they teach identifying mutations such as small amino acid Serine 107 which is replaced with a large amino acid Phenylalanine (page 7617, Title: Identification of the amino acid Substitution Responsible for CGP42112 Sensitivity). Though Pernot et al do not specifically recite only small or medium-chain amino acid and replace only them with a large-chain amino acid, the prior art implicitly teaches identifying a small-chain amino acid residue and replacing with a long-chain amino acid. Therefore, the prior art of record anticipates the instant invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 18 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Parnot et al in view of King et al (previously applied, Science 250: 121-123, 1990).

Applicants' argue (page 10) that because King et al is silent regarding identifying small or medium side-chain amino acids of a candidate orphan receptor and Parnot et

al teach making random mutations in every possible amino acid residues, they fail to teach the instant invention. Applicants argue that the instant method can be applied to an orphan receptor which does not have a known function whereas Parnot et al does this for a receptor with known function.

Applicants' arguments have been fully considered but they are not persuasive because Parnot et al teach making mutations at every possible amino acid to activate a receptor constitutively. This implicitly teaches mutating a small or medium-chain amino acid with a large-chain amino acid (as discussed above). Parnot et al teach that the process of making mutations within a receptor of unknown function has been practiced in the art (page 7615, middle of the right column). Therefore, the rejection is maintained.

Claim 28 remains rejected under 35 U.S.C. 103(a) as being unpatentable over Parnot et al (2000) in view in view of Lerner et al. (US Patent No. 6,051,386).

Claim 28 is further drawn to a method of identifying constitutively activating mutations in a receptor or an ion channel in a cell, wherein said cell is a pigment cell which is capable of dispersing or aggregating its pigment in response to an activated receptor or ion channels.

Applicants argue (pages 9-10) that because Lerner et al is silent regarding identifying small or medium side-chain amino acids of a candidate orphan receptor that are located in or proximate to a transmembrane segment of the receptor; and because Parnot et al teach making random mutations in every possible amino acid residues, Lerner and Parnot et al fail to teach the instant invention.

Applicants' arguments have been fully considered but they are not persuasive because Parnot et al teach making mutations at every possible amino acid to activate a receptor constitutively. This implicitly includes mutating a small or medium-chain amino acid with a large-chain amino acid (as discussed above). Therefore, the rejection is maintained.

Conclusion

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gyan Chandra whose telephone number is (571) 272-2922. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Nickol can be reached on (571) 272-0835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gyan Chandra
Art Unit 1646
08 January 2008
Fax: 571-273-2922

/Robert Landsman/
Primary Examiner, Art Unit 1647